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Confocal laser scanning microscopy--evaluation of native tissue sections in micrographic surgery.

Kaeb S, Landthaler M, Hohenleutner U.; Lasers Med Sci. 2009 Sep;24(5):819-23. DOI: 10.1007/s10103-009-0660-9

ABSTRACT

Micrographic surgery is mainly used for excising basal cell carcinomas in high-risk body sites. The time-consuming process of frozen histopathology could be potentially accelerated by the application of ex vivo confocal laser scanning microscopy (CM). We examined the margins of 52 excised basal cell carcinomas by means of CM, and compared the results to conventional histological findings. For contrast enhancement, tissues were treated with 10% citric acid. The morphologic features of tumors seen in CM corresponded well to conventional light microscopy. Confocal assessment and light microscopical findings were consistent in 84.6%. If a tumor is clearly detectable by means of CM, the procedure of micrographic surgery can be accelerated. Negative confocal findings have yet to be confirmed by conventional microscopy. Applicability of CM is limited because of an inconsistent image quality that does not allow a reliable detection of small tumor nests. Further research into the handling of the samples and into specific contrast enhancement is necessary for CM to become a widely accepted procedure in micrographic surgery.